REMARKS/ARGUMENTS

Entry of this amendment is respectfully requested on the grounds that it addresses a number of informalities identified in the last Office action and responds to a new ground of rejection to which the applicant has not had an opportunity to respond. Entry of this amendment will simplify the issues on appeal, should an appeal become necessary.

The last Office action was accompanied by an Interview Summary. The Interview Summary is accurate. More particularly, applicant was interested in knowing if the previous amendment was sufficient to overcome the art of record at that time. The examiner indicated that the previous amendment appeared to overcome the art of record but that an additional search would be necessary and that the examiner could not opine on the ultimate patentability of the claims.

In paragraph 3 of the Office action, the abstract is objected to "because the expressions should be separated using commas or semicolons." The abstract has been corrected as requested.

In paragraph 4 of the Office action, paragraph [0010] is objected to because the expressions should be separated with either commas or semicolons. Paragraph [0010] has been corrected as requested. Claims 3 and 13 have been amended in a similar manner.

Claim 26 has been amended to add the phrase "to produce a transposition of the data in the array." Similar language appears in the preambles of the method claims, but because of the nature of apparatus claim 26, that language was omitted from the preamble. The omitted language is now positively recited in the body of the claim.

In paragraph 8 of the Office action, claims 1-7, 9-17, 19-20, and 26 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Kirsch, U.S. Publication Number 20040054870. Applicant respectfully traverses that rejection.

In paragraph 9, the examiner "believes that the manner in which Kirsch anticipates this limitation [shifting the data N-1 times along a plurality of diagonals of the plurality of processing elements until each processing element in each of said plurality of diagonals has received the data held by every other processing element in that diagonal] is best illustrated using a visual example. *Modeled after Fig. 8b of Kirsch*, an 8x8 (N=8) array populated with data . . ." (emphasis added). It is respectfully submitted that for an anticipation rejection, the examiner

should *use the example of the reference*, and not an example *modeled after* the teachings of the reference.

First, the examiner takes undue liberties with the definition of "diagonal." The examiner asserts that the "diagonal" from the upper left corner to lower right corner (i.e., 0, 9, 18, 27, 36, 45, 54, 63) is actually two diagonals (i.e., a plurality of diagonals). The examiner points to no teachings in Kirsch to support his assertion that a single diagonal can be treated as two diagonals. In fact, the teachings of Kirsch are repugnant to the notion that a single diagonal is actually a plurality of diagonals. For example, in Fig. 8a and paragraph [0163], the diagonal 804 is identified as "a leading diagonal" and not "a plurality of leading diagonals" as asserted by the examiner.

> [0163] The diagonal shift 802 is achieved by shifting data with pairs of row and column shift operations 802a, 802b as described above. The number of diagonal shifts, `N`, for each processing element required to achieve a complete transposition of the data in the processing element array 200 depends on the distance of each processing element 806 from a leading diagonal 804. (emphasis added)

Absent any teaching in Kirsch that Kirsch discloses that a single diagonal can be considered to be a plurality of diagonals, the examiner's bald, hindsight assertion cannot serve as the basis for a rejection under section 102. If the examiner remains of the opinion that the identified diagonal of Kirsch can be treated as two diagonals, the examiner is respectfully requested to place into the record citations to those portions of Kirsch that would lead a person of ordinary skill in the art to conclude that a single diagonal may be considered to be a plurality of diagonals so that this issue can be fully addressed on appeal.

Second, the examiner is certainly aware that in Kirsch, the data moves only as far as needed, with the data on the leading diagonal 804 not moving at all as clearly taught by the following paragraphs from Kirsch.

> [0163] The diagonal shift 802 is achieved by shifting data with pairs of row and column shift operations 802a, 802b as described above. The number of diagonal shifts, `N`, for each processing

element required to achieve a complete transposition of the data in the processing element array 200 depends on the distance of each processing element 806 from a leading diagonal 804.

[0164] Referring to FIG. 8b, the array 200 is shown with a counter 806 for each processing element 821. A complete transposition operation of the, data stored in the array 200 is performed by decrementing the counter 820 on each diagonal shift 802. When a counter 820 in a given processing element reaches zero, the data in that processing element is not shifted any further and the neighbourhood connection register 308 in that processing element is loaded with its result value from the result register 306.

[0165] Each counter 820 starts with the value N, which is obtained for each processing element from the following expression:

[0166] (COL_INDEX+ROW_INDEX+1) mod ARRAY_SIZE

[0167] where COL_INDEX and ROW_INDEX are row and column indexes 822, 824 for a processing element. ARRAY_SIZE is a width/height 826 of the array. N.B. The aforementioned expression gives zero for all the processing elements on the leading diagonal as the values in these processing elements do not have to move. (emphases added)

The examiner cleverly sidesteps this glaring defect in Kirsch by arguing that if any one value is passed along by all of the processing elements, then the language requiring that "each processing element in each of said plurality of diagonals has received the data held by every other processing element in that diagonal" is met. The examiner distorts the meaning of the claim language to arrive at that position. While it is true that the claim language is to be given its broadest reasonable interpretation, *that interpretation must be consistent with the specification.* There is no support in the specification for the construction given by the examiner. The specification makes quite clear what is meant by the language of the claims. Per the claims, each of the processing elements receives all of the data held by all of the other processing elements within the diagonal (i.e., 0, 9, 18, 27, 36, 45, 54, 63) and then selects the value needed to produce the transposition based on the processing element's position. It is submitted that when the claims

are given the broadest reasonable interpretation *consistent with the specification*, the claim limitation is not disclosed by Kirsch. If the examiner remains of the opinion that the examiner's interpretation is reasonable, the examiner is requested to place into the record for purposes of appeal those portions of the specification upon which the examiner relies for his interpretation of the claims.

In conclusion, the issue here is not whether the examiner, through clever manipulation, can cause certain claim language to read on the reference. The issue is whether the reference, taken in its entirety for what it fairly teaches one of ordinary skill in the art, teaches the same thing that is being claimed. One aspect of what is being claimed in the instant case is that the data from each processing element is received by every other processing element in a diagonal and then an output value is selected from amongst the received data. The method of Kirsch does not come close to teaching such a method. Kirsch teaches moving the data only as far as it needs to be moved with the data on the leading diagonal not moving at all. That is how a transposition of the data is accomplished in Kirsch, which is quite different from how a transposition is accomplished in independent claims 1, 11, and 26. The clear teachings of Kirsch cannot be replaced by the clever hindsight manipulations of the examiner.

Entry of this amendment and issuance of a notice of allowance for pending claims 1-20 and 26 is respectfully requested. If, however, the examiner is of the belief that the disclosed invention and the disclosure of Kirsch are indeed different, but that the language of the claims is insufficient to bring out that difference, then the examiner is respectfully requested to contact the undersigned so that possible amendments (e.g., shifting the entire array of data) may be discussed.

Respectfully submitted,

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